

REMARKS/ARGUMENTS

Claims 1, 4-34, and 36-53 are being resubmitted. Claims 1 and 34 are currently amended. Claims 2-3 and 35 are being canceled without prejudice or disclaimer of the subject matter. No new claims have been added.

Claims 1, 2, 5, 34, and 38 have been rejected under 35 USC § 103(a) as being unpatentable over Wincn (U.S. 5,600,321). Claims 3, 4, 6-10, 35-37, and 39-41 have been objected to as being dependent on a rejected base claim but allowable if rewritten to include limitations of the base claim and any intervening claims. Claims 11-33 and 42-53 are allowable.

Allowable Subject Matter

Applicant would like to thank the Examiner for the indication that claims 11-33 and 42-53 are allowable. Applicant respectfully accepts allowance of claims 11-33 and 42-53.

Claims 3, 4, 6-10, 35-37, and 39-41 have been objected to as being dependent on a rejected base claim but would be allowable if rewritten in independent form to include the limitations of the base claim and any intervening claims.

Claim 1 has been amended to incorporate the limitations of claims 2 and 3. Thus, it is believed that claim 1 and claims 4-10, which are dependent from claim 1, are now in condition for allowance.

Claim 34 has been amended to incorporate the limitations of claim 35, and dependency of claim 36 has been amended. Thus, it is believed that claim 34 and claims 36-41, which are dependent from claim 34, are now in condition

for allowance.

Winch

Claims 1, 2, 5, 34, and 38 have been rejected under 35 USC § 103(a) as being unpatentable over Winch (U.S. 5,600,321).

While Winch does not appear to explicitly disclose or claim a multiplying D/A converter, Applicant agrees with the Examiner that Winch does, however, use a plurality of unit cells (referred to in Winch as "LSB cells") to construct a D/A converter.

It may appear in hindsight that a design such as Winch's could be used as a multiplying D/A converter by providing appropriate reference currents to the connections labeled P_BIAS and N_BIAS. It may also appear in hindsight that Winch could be combined with the 1971 references cited by Applicant to construct a multiplying D/A converter from a plurality of unit cells. Neither Winch nor other prior art, whether alone or in combination, however, teach combining the matched transmission lines as an integral piece of the multiplying D/A converter (as in claims 1 and 34 as amended).

The Office action states:

However, such biasing techniques [of using a local differential oscillator] to reduce errors and contain non-linearity are well known in the art of analog-to-digital and digital-to-analog converters.

Applicant respectfully submits that superimposing the differential oscillator signal upon the bias has nothing to do with reducing errors or containing non-linearity - it's there in the present invention to effect the multiplication (and hence the upconversion, i.e., effectively up-converting the digital data about the

LO frequency). Furthermore, Winco teaches nothing about how to arrange the unit cells to reduce errors and contain non-linearity, as in claims 29 and 48, for example, of the present invention.

Also, Winco had no mention of constructing interpolation cells, incorporating them into the architecture, or of what advantages their use might convey, as in claims 7, 17, 23, 40, and 45, for example, of the present invention.

CONCLUSION

Reconsideration and withdrawal of the Office Action with respect to claims 1, 4-10, 34, and 36-41 is requested. Allowance of claims 11-33 and 42-53 is respectfully accepted. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

In the event the examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

Respectfully submitted,

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